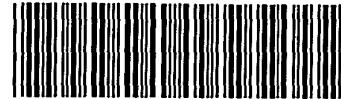


re-run #7



1600

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/069,772

DATE: 10/21/2002  
TIME: 17:39:45

Input Set : N:\CrF3\Refhold\J069772.raw  
Output Set: N:\CRF4\10212002\J069772.raw

**ENTERED**

1 <110> APPLICANT: Feussner, Ivo  
2 Hornung, Ellen  
3 Fritzsche, Kathrin  
4 Peitzsch, Nicola  
5 <120> TITLE OF INVENTION: Fatty acid desaturase gene from plants  
6 <130> FILE REFERENCE: 0050/50669  
7 <140> CURRENT APPLICATION NUMBER: US/10/069,772  
8 <141> CURRENT FILING DATE: 2002-05-09  
9 <150> PRIOR APPLICATION NUMBER: PCT/EP/00/08222  
10 <151> PRIOR FILING DATE: 2000-08-23  
11 <160> NUMBER OF SEQ ID NOS: 2  
12 <170> SOFTWARE: WordPerfect version 6.1  
14 <210> SEQ ID NO: 1  
15 <211> LENGTH: 1285  
16 <212> TYPE: DNA  
17 <213> ORGANISM: Calendula officinalis  
18 <220> FEATURE:  
19 <221> NAME/KEY: CDS  
20 <222> LOCATION: (42)..(1175)  
21 <400> SEQUENCE: 1  
22 aaaagctcac ttctctgtga gggtaattat atatcaacaa c atg ggt gct ggt ggt 56  
23 Met Gly Ala Gly Gly  
24 1 5  
25 cggtatgcgtcgatccatctgatggaaaacatccgtgtccaa 104  
26 Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile Leu Glu Arg Val Pro  
27 10 15 20  
28 gtcgatccacccgttacgttacgtatctgaaagaaa 152  
29 Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys Lys Ala Ile Pro Thr  
30 25 30 35  
31 cat tgc ttt gag cga tct gtc atc cgg tca tca tac tat gtt gtt cat 200  
32 His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser Tyr Tyr Val Val His  
33 40 45 50  
34 gat ctc att gtt gcc tat gtc ttc tac tac ctt gca aac acg tat atc 248  
35 Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu Ala Asn Thr Tyr Ile  
36 55 60 65  
37 cct ctt att cct aca cct ctg gct tac cta gca tgg ccc gtt tac tgg 296  
38 Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala Trp Pro Val Tyr Trp  
39 70 75 80 85  
40 ttt tgt caa gct agc atc ctc acc ggc ctc tgg gtc atc ggt cac gaa 344  
41 Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp Val Ile Gly His Glu  
42 90 95 100  
43 tgt ggt cac cat gca ttt agc gac tac cag ttg att gat gac att gtt 392  
44 Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu Ile Asp Asp Ile Val

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/069,772

DATE: 10/21/2002

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Input Set : N:\Crf3\Refhold\J069772.raw  
 Output Set: N:\CRF4\10212002\J069772.raw

45	105	110	115	
46	gga ttc gtg ctc cat tcg gct ctc acc ccg tat ttc tct tgg aaa			440
47	Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro Tyr Phe Ser Trp Lys			
48	120	125	130	
49	tat agc cac agg aat cac cac gcc aac aca aat tca ctc gat aac gat			488
50	Tyr Ser His Arg Asn His His Ala Asn Thr Asn Ser Leu Asp Asn Asp			
51	135	140	145	
52	gaa gtt tac att cct aaa cgt aag tcg aag gtc aag att tat tcc aaa			536
53	Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val Lys Ile Tyr Ser Lys			
54	150	155	160	165
55	ctt ctt aac aat cca ccc ggg cga gtg ttc act ttg gtg ttt cgg ttg			584
56	Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr Leu Val Phe Arg Leu			
57	170	175	180	
58	act tta gga ttt ccg tta tac ctc tta act aat atc tcg ggc aag aaa			632
59	Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn Ile Ser Gly Lys Lys			
60	185	190	195	
61	tac ggg agg ttt gcc aac cac ttt gat ccc atg agt cca att ttc aac			680
62	Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met Ser Pro Ile Phe Asn			
63	200	205	210	
64	gat cgt gaa cgc gtt caa gtt ttg cta tcc gat ttc ggt ctt ctc gct			728
65	Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp Phe Gly Leu Leu Ala			
66	215	220	225	
67	gta ttt tat gca atc aag ctt ctt gta gca gca aaa ggg gca gct tgg			776
68	Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala Lys Gly Ala Ala Trp			
69	230	235	240	245
70	gta atc aac atg tac gca att cca gta cta ggt gta agc gtc ttc ttc			824
71	Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly Val Ser Val Phe Phe			
72	250	255	260	
73	gtt ttg atc aca tat ttg cac cac acc cat ctc tca ctc cct cat tat			872
74	Val Leu Ile Thr Tyr Leu His His Thr His Leu Ser Leu Pro His Tyr			
75	265	270	275	
76	gat tca acc gaa tgg aac tgg atc aaa ggc gcc tta tca aca atc gat			920
77	Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala Leu Ser Thr Ile Asp			
78	280	285	290	
79	agg gat ttc ggg ttc ctg aat cgg gtt ttc cac gac gtt aca cac act			968
80	Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His Asp Val Thr His Thr			
81	295	300	305	
82	cac gtc ttg cat cat ttg atc tca tac att cca cat tat cat gca aag			1016
83	His Val Leu His Leu Ile Ser Tyr Ile Pro His Tyr His Ala Lys			
84	310	315	320	325
85	gaa gca agg gat gca atc aag cca gtg ttg ggc gag tac tat aaa atc			1064
86	Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly Glu Tyr Tyr Lys Ile			
87	330	335	340	
88	gac agg act cca att ttc aaa gca atg tat aga gag gct aag gaa tgc			1112
89	Asp Arg Thr Pro Ile Phe Lys Ala Met Tyr Arg Glu Ala Lys Glu Cys			
90	345	350	355	
91	atc tac atc gag ccc gat gag gat agc gag cac aaa ggt gtg ttc tgg			1160
92	Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His Lys Gly Val Phe Trp			
93	360	365	370	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/069,772

DATE: 10/21/2002  
TIME: 17:39:45

Input Set : N:\Crf3\Reftold\J069772.raw  
Output Set: N:\CRF4\10212002\J069772.raw

94 tac cac aag atg taa tcaaaaaggt gtatgtcaat gcaattgtat gcttaattaa 1215  
95 Tyr His Lys Met  
96 375  
97 gttgttaaac tttctattcc gtgtataaaa ttatcattaa gagaaaaaaaaaaaaaaaaa 1275  
98 aaaaaaaaaaaaaa 1285  
100 <210> SEQ ID NO: 2  
101 <211> LENGTH: 377  
102 <212> TYPE: PRT  
103 <213> ORGANISM: Calendula officinalis  
104 <400> SEQUENCE: 2  
105 Met Gly Ala Gly Gly Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile  
106 1 5 10 15  
107 Leu Glu Arg Val Pro Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys  
108 20 25 30  
109 Lys Ala Ile Pro Thr His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser  
110 35 40 45  
111 Tyr Tyr Val Val His Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu  
112 50 55 60  
113 Ala Asn Thr Tyr Ile Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala  
114 65 70 75 80  
115 Trp Pro Val Tyr Trp Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp  
116 85 90 95  
117 Val Ile Gly His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu  
118 100 105 110  
119 Ile Asp Asp Ile Val Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro  
120 115 120 125  
121 Tyr Phe Ser Trp Lys Tyr Ser His Arg Asn His His Ala Asn Thr Asn  
122 130 135 140  
123 Ser Leu Asp Asn Asp Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val  
124 145 150 155 160  
125 Lys Ile Tyr Ser Lys Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr  
126 165 170 175  
127 Leu Val Phe Arg Leu Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn  
128 180 185 190  
129 Ile Ser Gly Lys Lys Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met  
130 195 200 205  
131 Ser Pro Ile Phe Asn Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp  
132 210 215 220  
133 Phe Gly Leu Leu Ala Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala  
134 225 230 235 240  
135 Lys Gly Ala Ala Trp Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly  
136 245 250 255  
137 Val Ser Val Phe Phe Val Leu Ile Thr Tyr Leu His His Thr His Leu  
138 260 265 270  
139 Ser Leu Pro His Tyr Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala  
140 275 280 285  
141 Leu Ser Thr Ile Asp Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His  
142 290 295 300  
143 Asp Val Thr His Thr His Val Leu His His Leu Ile Ser Tyr Ile Pro

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/069,772

DATE: 10/21/2002  
TIME: 17:39:45

Input Set : N:\Crf3\Reffold\J069772.raw  
Output Set: N:\CRF4\10212002\J069772.raw

144 305 310 315 320  
145 His Tyr His Ala Lys Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly  
146 325 330 335  
147 Glu Tyr Tyr Lys Ile Asp Arg Thr Pro Ile Phe Lys Ala Met Tyr Arg  
148 340 345 350  
149 Glu Ala Lys Glu Cys Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His  
150 355 360 365  
151 Lys Gly Val Phe Trp Tyr His Lys Met  
152 370 375

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/069,772

DATE: 10/21/2002

TIME: 17:39:46

Input Set : N:\Crf3\Rehold\J069772.raw

Output Set: N:\CRF4\10212002\J069772.raw